

New Fijian and African Trichoptera

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The species described in this paper form part of a collection of Trichoptera sent to London by correspondents of the Imperial Institute of Entomology and presented by the Institute to the British Museum.

Very little is known of the Fijian Trichoptera of which only five species have hitherto been recorded, but no doubt the fauna is far richer than this meagre total would suggest. The five known species are distributed amongst three families, the *Sericostomatidae*, the *Hydropsychidae* and the *Philopotamidae*. The description here of *Triaenodes dubia* sp. n. adds a fourth, the *Leptoceridae*, to this small group.

Of the African species here described, one is a new *Oecetis* and the other a *Hydropsychodes*. A list of described African *Oecetis* species was given in *Stylops*, vol. I, pt. 6, p. 133, 1932, and I take this opportunity of pointing out that *Oecetis excisa* Ulm. was included in error. The species is Argentine. Thus, with the elimination of *excisa* and the addition in this paper of *afra* sp. n., the total African species in this genus still remains at eleven.

***Triaenodes dubia* sp. n. (figs. 1-4).**

Head pale ochraceous, the vertex covered with short golden hairs and with long ochraceous hairs at the sides; antennae ochraceous with dark annulations; palpi ochraceous.

Wings anterior covered with short golden hairs. In various parts are situated round lilac-coloured spots; these spots pertain to the

membrane, and persist after the wing has been denuded; the region of the anastomosis is snowy-white bordered with lilac; on the apical side of the anastomosis, the lilac spots are grouped to make a broad diagonal streak extending from the centre of the wing to the lower apical margin. In the anterior wing in the unique type, there is a vestige of the obsolete upper branch of the upper cubitus, indicated

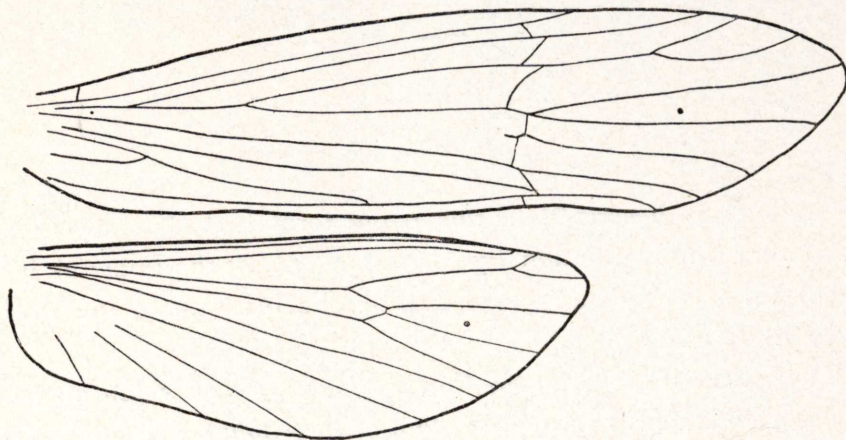


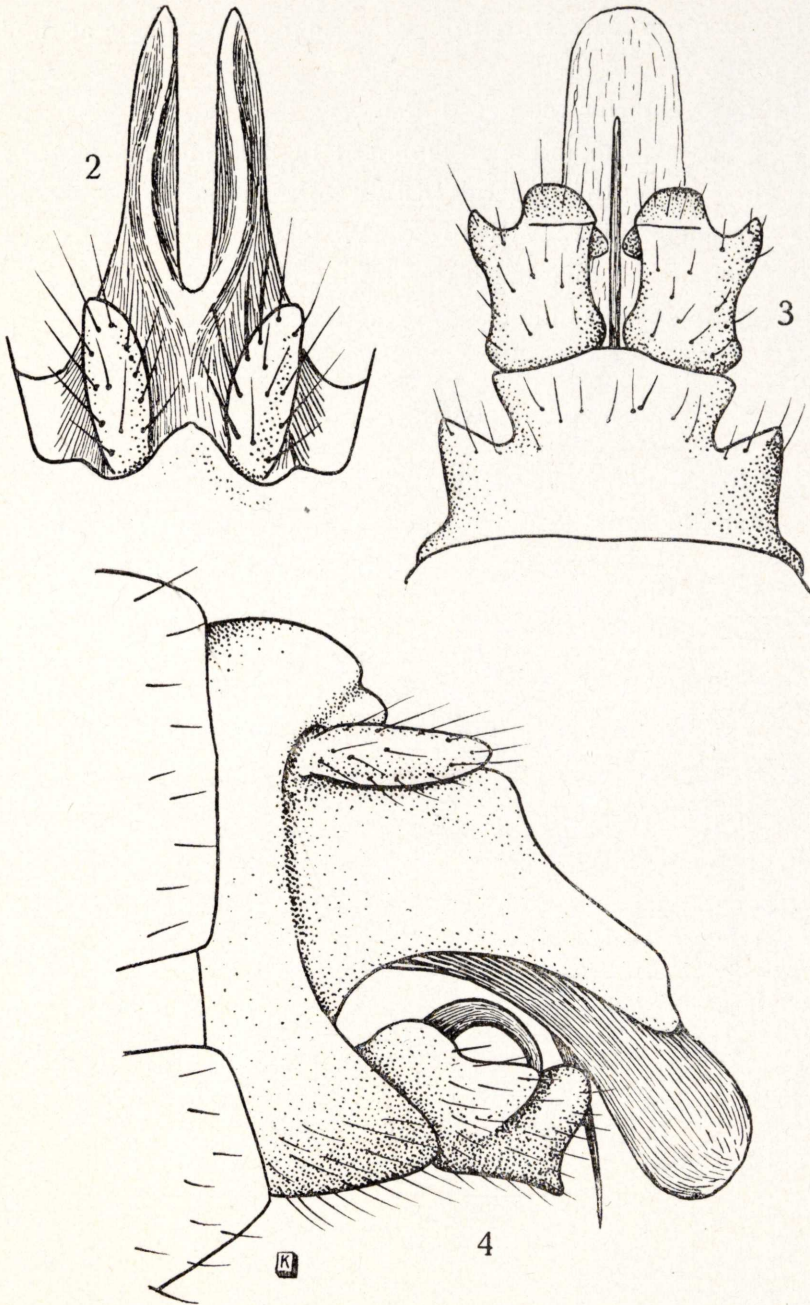
Fig. 1.—*Triaenodes dubia* sp. n. ♂, wings.

by an inward prolongation of the fifth apical sector. This formation is occasionally seen in the wing of *T. conspersa* Ramb.

Legs pale ochraceous.

Genitalia ♂: from above, the margin of the terminal dorsal segment is produced at the centre. Superior appendages rather short and shuttle-shaped, arising beneath and on each side of the produced portion of the terminal segment. Beneath them is a large bifurcate upper penis-cover which, from above, appears as a pair of long blade-shaped processes parallel with each other and arising from a broad base; from the side, the process is also very broad at the base, the forks being pressed against the sides of the penis and directed tailward and downward. Penis large and fleshy with a strongly chitinised lower surface. Beneath the penis is a long, downward curving, centrally situated slender spine. Inferior appendages very broad and trifurcate; seen from the side, the upper forks, arising towards the centre of the upper surfaces, are strongly chitinised and curve downwards; the second and third forks arise on the outer margins towards the apices; from beneath, the tips of the upper forks can be seen in the narrow

space between the two appendages which are very broad, nearly rec-



Figs. 2-4.—*Iriaenodes dubia* sp. n. ♂: 2, terminal dorsal segment, superior appendages and upper penis-cover; 3, genitalia ventral; 4, lateral.

tangular, with the second and third forks situated at the apical angles,

the outer, rather slender with an acute apex; the inner, broad and rounded. Terminal ventral segment produced in the centre, in a broad truncate process with a deep excision on each side at the base of the produced portion.

Length of anterior wing ♂ 9 mm.

Type ♂, with the abdomen mounted in balsam, presented to the British Museum by the Imperial Institute of Entomology.

Mt. Lautoka, Fiji, 22.VIII.1920. W. Greenwood.

The genitalia in this species do not conform to the typical arrangement in the genus as indicated by McLachlan.

***Hydropsychodes fijiana* sp. n. (figs. 5-10).**

Head black; oculi bronze; antennae, ochraceous without any obvious annulations in the male dried example, but, in a female specimen cleared in KOH, a diagonal stripe is clearly discernable; palpi dark ochraceous with the joints varying slightly from the typical *Hydropsychodes* from as seen in figure 10.

Wings black, anterior with four white markings; one large towards the apex; the second, towards the basal extremity of the discoidal cell,

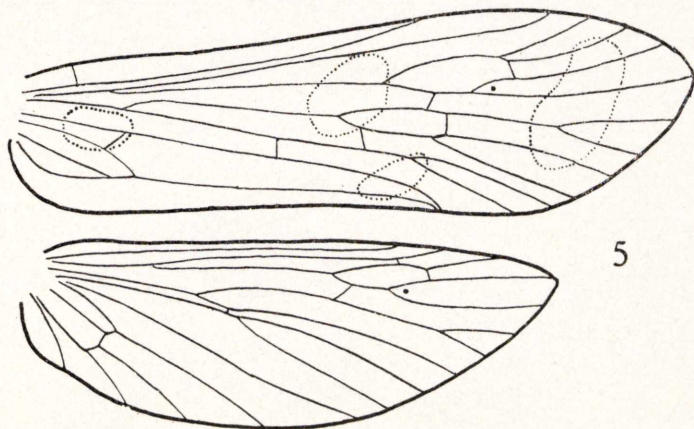
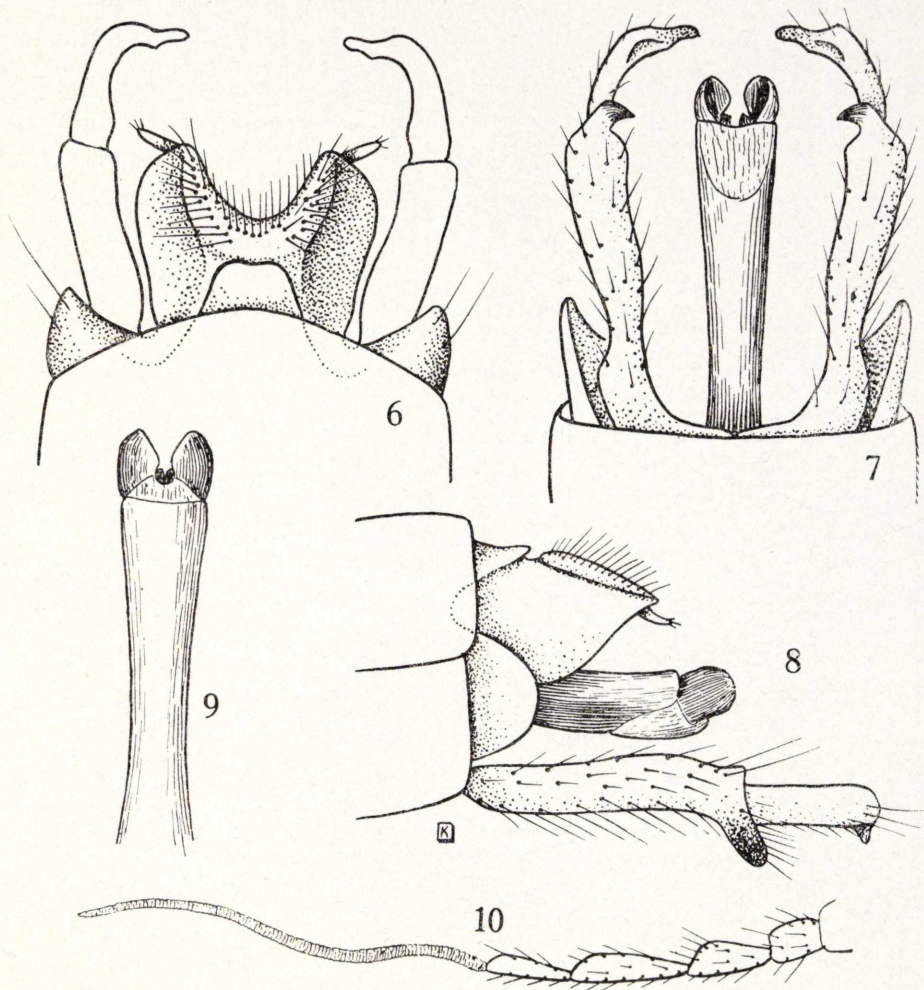


Fig. 5.—*Hydropsychodes fijiana* sp. n. ♂, wings.

somewhat smaller. These two spots are white pigmentations of the membrane itself. Two smaller spots caused by patches of white hairs are seen, one close to the base and the other towards the arculus. Posterior, suffused with whitish towards the base.

Legs ochraceous, spurs apparently 0.4.4 in the ♂, 2.4.4 in the ♀.

Genitalia ♂: terminal dorsal segment, from above, much produced; apex of the produced part truncate. Beneath this produced seg-



Figs. 6-10.—*Hydropsychodes fijiana* sp. n. ♂: 6, genitalia, dorsal (penis not shown); 7, inferior appendages and penis, ventral; 8, genitalia lateral; 9, penis, dorsal; 10, maxillary palpus, ♀.

ment extends a large plate, widely excised at the apex, with a wide hairy patch bordering the excision; the outer angles are produced in small finger-like processes set somewhat below the upper surface and directed outward and downward; there are two triangular side pieces, rounded from the side. The whole plate is broad at the base, from the side, narrowing to a very acute apex with the finger-like process di-

rected tailward and slightly downward. Penis, from above, terminates in an excised apex; from the side, there is a slight excision before the apex, covered by a membranous wrap. Inferior appendages two-jointed, apex of the basal joint widely dilated to make what is almost a downwardly directed process which is very strongly chitinised and somewhat blackened; from beneath, the apex of the dilated portions appears as an incurved hook; terminal joint narrow, sinuate towards the apex and bent inwards at right-angles, strongly chitinised and darkened, with a slight depression on the inner under side.

Length of anterior wing ♂ 5 mm.; length of anterior wing ♀ 7 mm.

Type ♂, with the abdomen mounted in balsam, Dreketi R.IX.1922. H. W. Simmonds, Fiji.

Paratypes ♀ ♀, H. Phillips, Lautoka, Fiji, 21.III.1930 (four examples); H. W. Simmonds, T 14. Waidoi, VIII.1927.

All presented by the Imperial Institute of Entomology to the British Museum. Included with these are four ♀ ♀ belonging to a different species, rather similar in colour and markings but differing slightly in neurulation and much larger. I await the ♂ in order to describe the species.

Hydropsychodes maculata sp. n. (figs. 11-13).

Head dark ochraceous with fuscous hairs; antennae dark ochraceous with scarcely darker annulations at the sutures of the joints, basal joint rounded and rather darker than the remainder; palpi ochraceous.

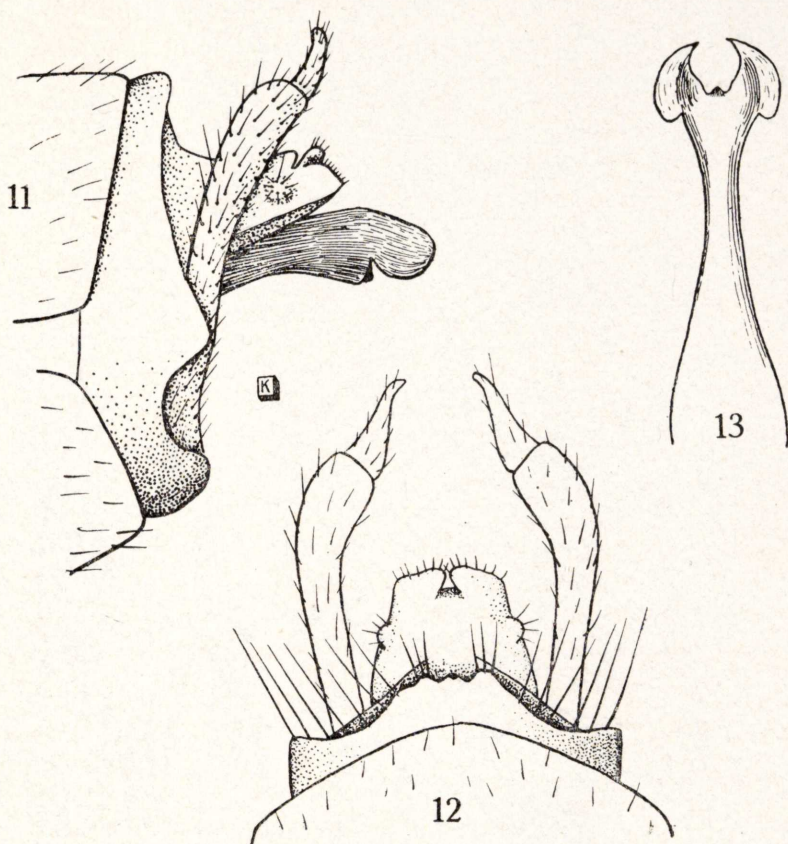
Thorax and metathorax nearly black.

Wings fulvous, anterior, with numerous gold irrorations arranged in masses and leaving five or six small round areas clear of irrorations so as to produce a somewhat spotted appearance; posterior wing fulvous without any irrorations.

Legs dark ochraceous.

Genitalia ♂ the margin of the terminal dorsal segment, from above, produced at the centre to a serrately excised apex; from the side, there is a sharply projecting angle opposite the pleurites; beyond the terminal segment and at a lower level is a projecting plate with the

apical margin, seen from above, divided into two truncate lobes whose inner angles approach each other leaving a triangular excision between; there is a rounded wart on each side of the plate about midway but rather towards the apex, as seen from the side. Penis, from above, dilated at the base, then constricted before the much dilated apex



Figs. 11-13.—*Hydropsychodes maculata* sp. n. ♂: 11, genitalia lateral; 12, dorsal
13, penis, dorsal.

which is divided into two falcate blade-like wings, edges directed outwards with a wide excision between, the apices of the blades rather acute and approaching each other; from the side, the apex of the penis is dilated with a narrow excision at the lower margin. Inferior appendages with the first joint dilated at the apex, terminal joint short, and tapering abruptly to an acute apex.

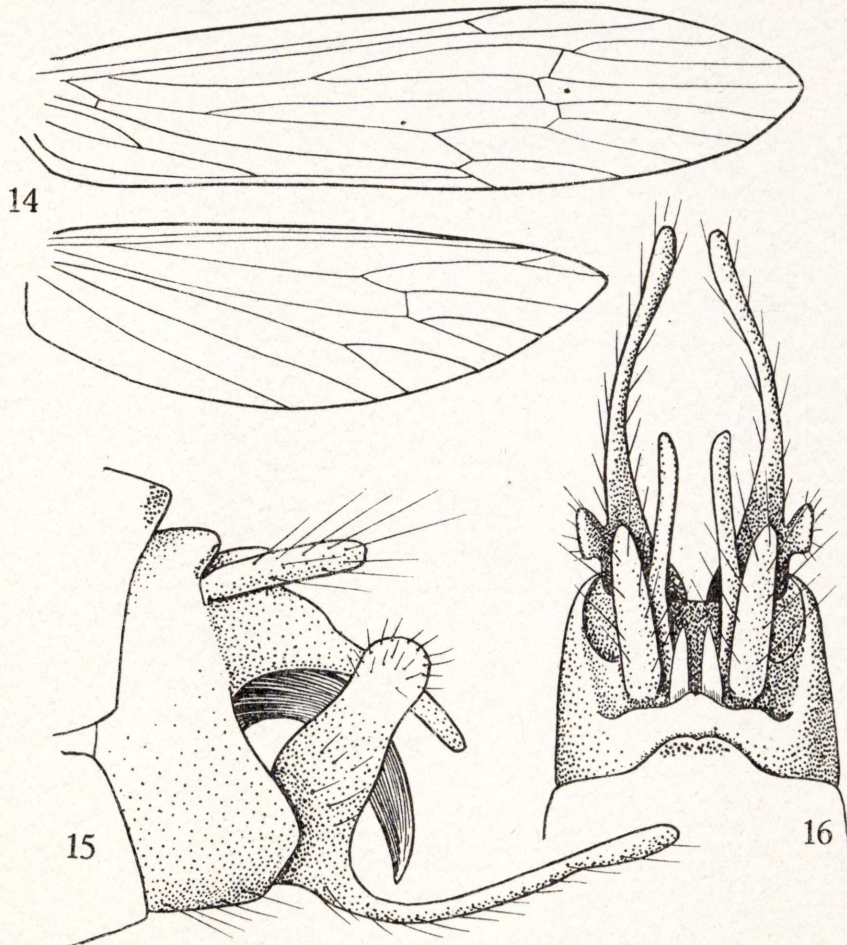
Length of anterior wing ♂ 6 mm.

Type ♂, with the abdomen mounted in balsam, presented to the British Museum by the Imperial Institute of Entomology.

Stellenbosch. 27.X.20. Ch. K. Brain.

Oecetis afra sp. n. (figs. 14-16).

Head reddish brown, densely clothed with reddish-brown hairs; oculi black; antennae dark ochraceous, basal joint long, remaining joints faintly annulated with fuscous; palpi ochraceous.



Figs. 14-16.—*Oecetis afra* sp. n. ♂: 14, wings; 15, genitalia lateral; 16, dorsal (penis not shown).

Legs pale ochraceous.

Wings anterior, densely clothed with tawny hairs; posterior, with hairs of the same colour but much less dense, fringes tawny.

Genitalia ♂: terminal and penultimate segments, from above, produced at their centres, the extreme apices of the produced portions slightly excised; the margin of the terminal segment, from above, is very obscure and the segment is probably welded to the appendages; from beneath, it is widely excised. Superior appendages, from above, long and fingershaped, slightly divergent and scarcely tapering; from the side, they are nearly rectangular, narrow, and directed tailward; between them, from above, are two smaller processes corresponding in shape and direction to the superior appendages. Upper penis-cover in the form of two long tailwardly and downwardly directed processes, somewhat finger-shaped and, from the side, very stout at the base. Beneath these, seen from the side, is a stout, downwardly curving penis. Inferior appendages bifurcate, upper fork, from the side, long and broad with a rounded apex, directed upward; lower fork very long and slender, directed tailward.

Length of anterior wing ♂ 9 mm.

Type ♂, presented by the Imperial Institute of Entomology to the British Museum. The abdomen is mounted in balsam.

N. Rodesia, Niankosa, 16.III.1930. Silvester Evans.

The recorded Fijian Trichoptera.

SERICOSTOMATIDAE

Goëra fijiana Banks (3).

LEPTOCERIDAE

Triaenodes dubia sp. n.

HYDROPSYCHIDAE

Hydropsychodes picea Brauer (4).

— *ruficeps* Brauer (4).

— *fijiana* sp. n.

PHILOPOTAMIDAE

Chimarrha manni Banks (3).

— *obscurella* Banks (3).

The following are the described African species of *Hydropsychodes*
Hydropsychodes albomaculata Ulmer (13).

- *alferii* Navás (7).
- *amboinica* Navás (8).
- *apicata* Navás (10).
- *atlantis* Navás (9).
- *bimaculata* Ulmer (14).
- *burgeonia* Navás (11).
- *diminuta* Walker (16).
- *falcifera* Ulmer (14).
- *lesnei* Mosely (5).
- *madagassa* Navás (6).
- *obscurata* Ulmer (14).
- *pallida* Banks (2).
- *plutonis* Banks (1).
- *sexfasciata* Ulmer (12).
- *socia* Navás (7).
- *thomasseti* Ulmer (15).
- *triangularis* Ulmer (15).
- *maculata* sp. n.

The numbers against the species in these two lists refer to the following references and indicate the papers in which the original descriptions were given.

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